

Determination of the intramammary dose of benzylpenicillin required to maintain an adequate concentration in the milk to inhibit Gram-positive bacteria in the clinically normal udder for 24 hr

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í)XOO WLWOH 'HWHUPLQDWLRQ RI WKH LQWUDPDPPDU\ GRVH R
î PDLQWDLQ DQ DGHTXDWH FRQFHQWUDWLRQ LQ WKH PLON WR
ï WKH FOLQLFDOO\ QRUPDO XGGHU IRU KRXUV
ð 6KRUW WLWOH 'HWHUPLQDWLRQ RI WKH LQWUDPDPPDU\ GRVH
ñ (ONH \$EEHODRXV 3\|U3LIYL 5DMDOD 9HFDXODQ\|V
ò %RHKULQJHU ,QJHOKHLP 9HWP HGLFD ,QJHOKHLP *HUPDQ\
ó 'HSDUWPHQW RI 3URGXFWRQ \$QLPDO 0HGLFLQH)DFXOW\ RI
ô +HOVLQNL 3DURQLQNXMD), 6DDUHQWDXV)LQODQG
õ 9HWFDUH /WG 3 2 %R[), 0IQWVIOI)LQODQG
îì &RUUHVSRQG [HONDIXWEH HORRV#ERHKULQJHU LQJHOKHLP FRP](#)
íí 2WKHU D[XWKBU\OO\|V#YHWFDUH IL](#)
íî \$E VWUDFW
íï 7KH DLP RI WKLV VWXG\ ZDV WR GHWHUPLQH WKH LQWUDPDPP
íð WR PDLQWDLQ D FRQFHQWUDWLRQ LQ WKH PLON DERYH WKH
íñ FDXVH PDVWLWLV 7KH SURGXFW XVHG LQ WKLV VWXG\ ZDV
íò EHQJ\|OSHQLFLOOLQ LQ DQ RLO\ VXVSHQVLRQ ZLWK PLFURQLJ
íó XVHG DQG ,8 &RQFHQWUDWLRQV RI EHQJ\|O
íô SODVPD ZHUH GHWHUPLQHG DIWHU D VLQJOH LQWUDPDPPDUY
íö TXDUWHU RI HDFK RI WKH FRZV LQ HDFK WUHDWPHQW JURX
îì +3/& 06 06 PHWKRQ ZKLFK ZDV YDOLG DWHG GXULQJ WKH VWXG\
îí ZHOO DERYH WKH 0,& IRU WKH WDUJHW SDWKRJHQV IRU DOO
îî GHSHQGHQW LQFUHDVH LQ WKH PHDQ \$8&V RI EHQJ\|OSHQLFLOO
îï \$W WKH ~~PLON~~ ~~WU~~ KRXUV DIWHU GRVLQJ WKHUH ZDV D VLQJ
íð PHDQ PLON EHQJ\|OSHQLFLOOLQ FRQFHQWUDWLRQV LQ FRZV W

îñ WKRVH WUHDWHG ZLWK RU ,8 \$OWKRXJK WKLV VV
îð EHWZHHQ WKH GRVH RI SURFDLQH EHQ]\OSHQLFLOOLQ DGPLQL
îó LQ WKH KHDOWK\ XGGHU LW ZRXOG EH XVHIXO WR FRQGXFV
îô WKH RSWLPXP GRVH DQG GXUDWLRQ RI LQWUDPDPPDU\ WUHDW
îö .H\ZRUG\$HQLFLOOLQ LQWUDPDPPDU\ FOLQLFDO PDVWLWLV
ïï DQWLELRWLFV

ïí ,QWURGXFWRQ
ïî \$QWLPLFURELDO UHVLVWDQFH LV DQ HPHUJLQJ LVVXH VR WKH
ïï DQLPDOV LV EHLQJ VFUXWLQLJHG ZRUOGZLGH /D[PLQDUD\DQ
ïð PRVW LPSRUWDQW LQGLFDWLRQ IRU DQWLELRWLF XVH RQ GDL
ïñ 6WHYHQV 3LHSHU%HQ\DOHQLFLOOLQ LV FRQVLGHUHG WR EH
ïò IRU PDVWLWLV FDXVHG E\ *UDP SRVLWLYH EDFWHULD EHFDXVH
ïó WR WKH (XURSHDQ 8QLRQ¶V UHVSQVLEOH XVH JXLGHOLQHV
ïô %HQ]\OSHQLFLOOLQ LV D ODFWDP DQWLELRWLF ZLWK EDFWH
ïö SRVLWLYH EDFWHULD RIWHQ6RQ\$SRLQSDQWLVKORRFRFDW
ðï VSS3UHVFRWW \$OO ODFWDP DQWLELRWLFV KDYH D WLP
ðí PHDQLQJ WKDW WUHDWPHQW VxFFHVV PDLQO\ GHSHQGV RQ W
ðî UHPDLQV DERYH WKH 0,& 7XUQLGJH (UVNLQH :DJQHU HW
ðï ,QWUDPDPPDU\ LQIXVLRQ LV WKH PRVW FRPPRQ URXWH RI DGF
ðð WR WUHDW PDVWLWLV *UXHW 0DLQFHQW HW DO 7KH D
ðñ DFWXDO LQIHFWLRQ VLWH E\ DGPLQLVWHULQJ WKH DQWLELRW
ðò RI WKH GUXJ WR UHDFK OHYHOV DERYH WKH 0,& IRU WKH EDFV
ðó LQJUHGLHQW PXVW QRW RQO\ GLVWULEXWH ZHOO LQWR WKH F
ðô DEVRUEHG LQWR WKH WLVVXH LI WKH LQIHFWLYH DJHQW LV DQ

ðð SDWKRJHQ 6WDFKDOVRFRFFXVYDXUHDV 7KH GLVWULEXWLRQ RI S
ñì DGPLQLVWHUHG YLD WKH LQWUDPDPPDU\ URXWH ZDV LQYHVWL
ñí E\ (KLQJHU DQG .LHW]PDQQ 3HQLFLOOLQ LQ RLO\ V XVSH
ñî PLFURQLJHG IRUP ZDV IRXQG WR KDYH WKH EHVW JODQGXOD
ñï VROXWLRQ RU RLO\ V XVSHQVLRQ ZLWK ODUJH SDUWLFOHV \$E
ñð JUHDWHVW DIWHU WUHDWPHQW ZLWK WKH RLO\ V XVSHQVLRQ Z
ññ DUHDV XQGHU WKH DEVRUSWLRQ WLPH FXUYHV (KLQJHU .LH
ñò \$V D UHVXOW WKH GHFLVLRQ ZDV WDNHQ WR XVH EHQJ\OSH
ñó SDUWLFOH VLJH WR IRUPXODWH D QHZ LQWUDPDPPDU\ SHQLFL
ñô OHGLFLQHV \$JHQF\ (0\$ JXLGHOLQHV RQ WKH FRQGXFWR RI SK
ñõ DQLPDO VSHFLHV WKH GRVH RI WKH DFWLYH VXEVDQFH Q
òì FRQFHQWUDWLRQ RI SHQLFLOOLQ LQ WKH PLON DV D IXQFV
òí FRQFHQWUDWLRQ WLPH SURLOH DW WKH LQIHFWLRQ VLWH L
òî SURFHGXUH VKRXOG EH DSSOLHG WR WKH SODVPD WR HVWLPD
òï GHWHUPLQDWLRQ VWXGLHV XVXDOO\ UHTXLUH WKUHH GLIIHU
òð SHUIRUPHG LQ KHDOWK\ DQLPDOV (0\$
ðñ 7KH DLP RI WKL V WXG\ ZDV WR GHWHUPLQH WKH LQWUDPDPP
ðò WR PDLQWDLQ D FRQFHQWUDWLRQ LQ WKH PLON DERYH WKH 0
ðó PDVWLWL V SDWKRJHQV &RQFHQWUDWLRQV RI EHQJ\OSHQLFLO
ðô PHDVXUHG IROORZLQJ D VLQJOH LQWUDPDPPDU\ DGPLQLVWUD
ðõ WKUHH GRVH OHYHOV DQG ,8 LQWR RQH XC
òì ZDV FRQGXFWHG LQ DQG IROORZHG WKH SULQFLSOHV RI W
òí RI SKDUPDFRNLQHWLF VWXGLHV LQ WDUJHW DQLPDO VSHFLHV
òî 7KH SURGXFW ZDV RULJLQDOO\ DXWKRULJHG IRU XVH LQ

óĭ DQ LGHQWLFDO FRS\ RI LW ZDV DSSURYHG IRU XVH LQ IRXUWH
óð WKURXJK WKH GHFHQWUDOLJHG SURFHGXUH

óñ 0DWHULDOV DQG 0HWKRGV

óò 6XEMHFWV DQG SURGXFW DGPLQLVWUDWLRQ

óó)LIWHHQ FOLQLFDOO\ KHDOWK\ WR \HDU ROG +ROVWHLQ F

óó FRZV ZHUH EHWZDQKWK RI ODFWDWLRQ DQG KDG QRW UH

óð WUHDWPHQW LQ WKH GD\V SUHFHGLQJ WKH WULDO 7KH DYH

ôĭ ± DW WKH EHJLQQLQJ RI WKH VWXG\ \$OO DQLPDOV ZH

ôĭ ZKLFK ZDV DOVR WKH VLWH RI WKH VWXG\ EXW DQ DFFOLPDWL

ôĭ SUH WULDO REVHUYDWLRQ RI WKH FRZV (DFK FRZ ZDV H[DPLQ

ôĭ WKH HQWLUH DFFOLPDWLRQ DQG VWXG\ SKDVH XGGHUV ZHUH

óð FKHFNHG IRU WKH DSSHDUDQFH RI FORWV RU IODNHV DQG FK

óñ SURGXFWLRQ ZDV UHFRUGHG DW HDFK PLONLQJ 'XULQJ WKH

óò UDQNHG E\ ODFWDWLRQ VWDJH WKHQ UDQGRPO\ DOORFDWHG

óó FRQWDLQLQJ WKUHH DQLPDOV WR HQVXUH VLPLODU GLVWUL

óó &RPSXWHULJHG UDQGRP QXPEHU JHQHUDWLRQ\$ ZDV SRVWRPHQ

óð &RUSRUDWLRQ 5HGPRQG :\$ 86\$ WR UDQGRPO\ DOORFDWH

ôĭ VWDJH JURXS WR HDFK RI WKUHH WUHDWPHQW JURXS 0RUH

ôĭ VWXG\ FDQ EH IRXQG LQ 7DEOH

ôĭ ,QFOXGH 7DEOH KHUH

ôĭ 7KH WHVW SURGXFW ZDV D UHJLVWHUHG LQWUHFDOO\ VX

óð 0DQWVDOD)LQODQG DOVR \$UHLVWULJH UDYQ8EORSHQ \$QLP

óñ *HUPDQ\ FRQWDLQLQJ ,8 HTXLYDOHQW WR PJ

ôô EHQJ\OSHQLFLOOLQ SHU P/ LQ DQ RLO\ V XVSHQVLRQ 7
ôô LQWUDPDPPDULO\ LQWR WKH OHIW IURQW TXDUWHU \$OO DQL
ôô PLONLQJ RQ 'D\)RU *URXS ,8 SHQLFLOOLQ DQG *U
ôô WZR WKLUGV DQG RQH KDOI UHVSHFWLYHO\ RI WKH FRQWHQ
ííí GLVFDUGHG EHIRUH DGPLQLVWUDWLRQ WR REWDLQ WKH FRUU
ííí FRZ 7KH IXOO FRQWHQWHU R\$WKH&ZDUH\$Q LQLVWHUHG WR DQ
ííí 7XEHV ZHUH ZHLJKHG EHIRUH DQG DIWHU DGPLQLVWUDWLRQ
ííí 7HDWV ZHUH SURSHUO\ FOHDQHG ZLWK LQGLYLGXDO DQWLVS
ííô
ííñ 7KH VWXG\ ZDV FDUULHG RXW LQ FRPSOLDQFH ZLWK)UHQFK O
ííô ODERUDWRU\ DQLPDOV DQG LQ DFFRUGDQFH ZLWK D YDOLG O
ííô DQLPDOV LVVXH G E\ WKH)UHQFK OLQLVWU\ IRU \$JULFXOWXUH
ííô FRPPLWWHH RI \$YRJDGUR)RQWHQLOOHV)UDQFH WKH FRQW
ííô UHVSQVLEOH IRU WKH WULDO \$5HIHUHQFH FRGH RI WKH VWXC
ííí
ííí OLON DQG EORRG VDPSOLQJ
ííí %HIRUH GRVLQJ PL[HG PLON VDPSOHV ZHUH FROOHFWHG IUR
ííí REWDLQH GXLQJ UHJXODU PLONLQJ 2Q GD\ PLON VDPSOH
ííô DW DQG KRXUV DIWHU GRVLQJ 7KH IRUHPLON IURP V
ííñ DQG WKH WHDW ZDV WKRURXJKO\ FOHDQHG DQG GLVLQIHFWH
ííô 7KUH VDPSOHV RI DERXW P/ RI PLON ZHUH FROOHFWHG IU
ííô VDPSOLQJ VHVVLRLQ 7KH FRZV WRWDO PLON \LHOG ZDV DOVF
ííô 6DPSOHV ZHUH WUDQVSRUWHG WR WKH DQDO\WLFDO ODERUD
ííô DERXW f& DQG IURJHQ WR DERXW f& DV VRRQ DV SRVVL

íîì %ORRG VDPSOHV ZHUH FROOHFWHG IURP WKH MXJXODU RU WD

íîí DQG KRXUV DIWHU DGPLQLVWUDWLRQ %ORRG P/ 2

íîî WXEHV ZKLFK ZHUH NHSW DW *f* & XQWLO FHQWULIXJDWLRQ 7

